



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,395	06/20/2003	Keisuke Asami	Q88511	8550
23373	7590	09/16/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			WOOD, KEVIN S	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/600,395

Applicant(s)

ASAMI ET AL.

Examiner

Kevin S. Wood

Art Unit

2874

me

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

FINAL REJECTION

Response to Amendment

1. This action is responsive to the Amendment received on 21 June 2005. Claims 1, 2, and 4 have been amended. No claims have been cancelled and no new claims have been added. Claims 1-9 are pending in the application.

Specification

2. Based on the replacement abstract, received as part of the Amendment received on 21 June 2005, the objection to the abstract is withdrawn. The replacement is accepted.

Drawings

3. The drawings were received on 6 July 2005. These drawings are accepted. The objection to Fig. 6-9 has been withdrawn.

Response to Arguments

4. Applicant's arguments filed 21 June 2005, with respect to the claim informalities, have been fully considered but they are not persuasive. The applicant states that claims 6, 8, and 9 have been amended to remove the basis for the objection, but no such amendment has been made. Claims 6, 8, and 9 were not amended by the amendment.

5. Applicant's arguments filed 21 June 2005, with respect to the rejections of claims 1-9 under 35 U.S.C. 103(a), have been fully considered but they are not persuasive. The examiner has thoroughly reviewed applicant's arguments but firmly believes the cited references to reasonably and properly meet the claimed limitations.

The applicant's primary argument was that the combination of the Nishiura et al. reference (U.S. Patent No. 5,335,064) and the Fuji et al. reference (U.S. Patent No. 4,603,941) does not specify that the splitter should be deployed between the polarizer and the second lens. The examiner respectfully disagrees with this argument. The Fuji et al. reference clearly discloses (within Fig. 3) that the splitter (43) is located between the polarizer (23) and the lens (44) that directs polarized light into the second polarization maintaining fiber. Therefore when combining the splitter and photoreceptor into the device of Nishiura et al., it would be obvious to arrange the splitter between the polarizer and the lens that directs the polarized light into the second polarization maintaining fiber, as suggested by the teachings of the Fuji et al. reference within Fig. 3.

The applicant also argues that the Fuji et al. reference (U.S. Patent No. 4,603,941) does not improve crosstalk characteristics and would not provide such an advantage to the Nishiura et al. device. The examiner respectfully disagrees with this argument. The applicant seems to be arguing the reason the examiner has used for combining the references is not the same as the applicant's. The examiner is not required to provide the same reason for combining the references as suggested by the

Art Unit: 2874

applicant. If it is obvious to combine the references for one reason then it is obvious to combine for other reasons as well. The examiner has already disclosed that the addition of the splitter and photoreceptor as disclosed by Fuji et al. to the Nishiura et al. device would provide the ability to monitor the signal for unwanted variations in the signal. It should also be noted that the Nishiura et al. reference already discloses crosstalk benefits, so it is not necessary for the improvements suggested by the Fuji et al. reference to provide the crosstalk improvements in order to meet the claim limitations.

Claim Informalities

6. Claims 6, 8 and 9 are improper to because of the following informalities: Claims 6, 8, and 9 recite the limitation "the polarization maintaining fiber". There is insufficient antecedent basis for this limitation in the claim. Which polarization maintaining fiber, the first polarization maintaining fiber or the second polarization maintaining fiber? Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over 5,335,064 to Nishiura et al. in view of U.S. Patent 4,603,941 to Fujii et al.

Referring to claims 1 and 3, the Nishiura et al. reference discloses a crosstalk improvement module intervening between a first polarization maintaining fiber and a second polarization maintaining fiber, including: a first lens for making an output light from the first polarization maintaining fiber a parallel light; a polarizer for converting the parallel light into linearly polarized light; a second lens for concentrating the light and supplying the light to the second polarization maintaining fiber. See Fig. 19 of the reference. The Nishiura et al. reference does not appear to disclose the splitter for splitting an output light of the polarizer or a photoreceptor for receiving a portion of the split light split by the splitter. The Fujii et al. reference discloses a polarization maintaining fiber system utilizing a splitter (43) to direct a portion of light output by a polarizer (23) onto a photoreceptor (35,36) for the purpose of detecting variations in the

Art Unit: 2874

light signal. Since the Nishiura et al. reference and the Fujii et al. reference are both from the same field of endeavor; the purpose of Fujii et al. would have been recognized in the pertinent art of the Nishiura et al. It would have been obvious to one having ordinary skill in the art to utilize a splitter and photoreceptor within the module taught by Nishiura et al., for the purpose of monitoring the signal and ensuring the system is working properly.

Referring to claims 5 and 7, the Nishiura et al. reference in view of the Fujii et al. reference disclose all the limitations of the claimed invention except for the first polarization maintaining fiber being connected to an input terminal of the crosstalk improvement module by a receptacle. The use of input terminals and receptacles for connecting optical fibers to devices or modules is well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a terminal and receptacle for the system for the purpose of making fiber easily detachable from the crosstalk module.

Referring to claims 6, 8 and 9, the Nishiura et al. reference discloses an optical component (45) conforming to a polarization maintaining optical fiber and being connected as the last component in a series of components.

10. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over 5,335,064 to Nishiura et al. in view of U.S. Patent Application Publication No. 20003/0223670 to Nikolov et al.

Referring to claims 2 and 3, the Nishiura et al. reference discloses a crosstalk improvement module intervening between a first polarization maintaining fiber and a second polarization maintaining fiber, including: a first lens for making an output light from the first polarization maintaining fiber a parallel light; a polarizer for converting the parallel light into linearly polarized light; a second lens for concentrating the light and supplying the light to the second polarization maintaining fiber. See Fig. 19 of the reference. The Nishiura et al. reference does not appear to disclose the splitter for splitting an output light of the polarizer or a monitor fiber for receiving a portion of the split light split by the splitter. The Nikolov et al. reference discloses a polarization beam splitter/combiner (Fig. 9-11), where a portion of the light is directed into a monitor fiber (593) and can be directed to an optical detector for the purpose of monitoring the power level. Since the Nishiura et al. reference and the Nikolov et al. reference are both from the same field of endeavor; the purpose of Nikolov et al. would have been recognized in the pertinent art of the Nishiura et al. It would have been obvious to one having ordinary skill in the art to utilize a splitter and monitor fiber for the purpose of monitoring the power in the optical signal and ensuring the system is working properly.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over 5,335,064 to Nishiura et al. in view of U.S. Patent 4,603,941 to Fujii et al. in further view of U.S. Patent No. 5,561,726 to Yao.

Referring to claim 4, the Nishiura et al. reference discloses a crosstalk improvement module intervening between a first polarization maintaining fiber and a

Art Unit: 2874

second polarization maintaining fiber, including: a first lens from making an output light from the first polarization maintaining fiber a parallel light; a polarizer for converting the parallel light into linearly polarized light; a second lens for concentrating the light and supplying the light to the second polarization maintaining fiber. See Fig. 19 of the reference. The Nishiura et al. reference does not appear to disclose the splitter for splitting an output light of the polarizer or a photoreceptor for receiving a portion of the split light split by the splitter. The Fujii et al. reference discloses a polarization maintaining fiber system utilizing a splitter (43) to direct a portion of light output by a polarizer (23) onto a photoreceptor (35,36) for the purpose of detecting variations in the light signal. Since the Nishiura et al. reference and the Fujii et al. reference are both from the same field of endeavor; the purpose of Fujii et al. would have been recognized in the pertinent art of the Nishiura et al. It would have been obvious to one having ordinary skill in the art to utilize a splitter and photoreceptor within the module taught by Nishiura et al., for the purpose of monitoring the signal and ensuring the system is working properly. Neither the Nishiura et al. reference nor the Fujii et al. reference appear to disclose a variable optical attenuator, provided in a front stage or a rear stage of the polarizer, for varying the input light, wherein the variable optical attenuator is controlled according to the output from the photoreceptor. The Yao reference discloses an apparatus for connecting polarization sensitive devices, such as polarization maintaining optical fibers, where the apparatus (12) acts as a variable optical attenuator when used in combination with a polarizer, for the purpose of controlling the optical power in a polarization sensitive system. See Fig. 9A and Fig. 9B of the Yao reference.

Art Unit: 2874

Since all three of the references are in the same field of endeavor, the purpose of the Yao reference would have been recognized in the pertinent art of the Nishiura et al. reference and the Fujii et al. reference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a variable optical attenuator as taught by Yao when optically coupling a first polarization maintaining fiber to a second polarization maintaining fiber, for the purpose of limiting the output power which could lead to high losses within the polarization maintaining fibers.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2874

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S. Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KSW

Kevin S. Wood

Michelle R. Connelly-Cushwa
MICHELLE CONNELLY-CUSHWA
PRIMARY EXAMINER